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The validity of the Spelling and Grammar Waiver as a reasonable accommodation in Leaving Certificate examinations in Ireland

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Introduction

At the end of five to six years of post-primary schooling, virtually all students in the Republic of Ireland sit the Leaving Certificate examination. It is the terminal examination in the Irish secondary school system and the marking is centralised and conducted in the main by the State Examination Commission (SEC). Students' results may be used to gain entry to university courses or to certain professions and to a great extent, students' future educational and vocational prospects depend on the Leaving Certificate results. Students with a disability are potentially at a disadvantage in taking the examination but they can apply for certain Reasonable Accommodations in Certificate Examinations (RACE) in order to mitigate any disadvantage. The Department of Education and Skills (DES) in Ireland defines a disability in relation to examination accommodations as a "physical disability, including visual and hearing impairments, or a specific learning difficulty" (Department of Education and Science, 1994, p. 1).

Reasonable accommodations are changes in the assessment materials or procedures that some students with disabilities need in order to have access to a test or examination. Without accommodations, many students are at a disadvantage in demonstrating what they actually know and can do. (Madaus, Russell, & Higgins, 2009). The Department of Education and Skills defines the purpose of these reasonable accommodations as:

"(a) to remove, as far as possible, the impact of the disability on the candidate's performance and thus enable the candidate to demonstrate his or her level of attainment and

(b) to ensure that, whilst giving candidates every opportunity to demonstrate their level of attainment, the special arrangements will not give the candidate an unfair advantage over other candidates in the same examination."

(Department of Education and Science Circular, 1994, S40/94 p.1)

Due to the high stakes of the Leaving Certificate examinations, ensuring equity and fairness for all candidates, while guaranteeing the examination as an objective measure of achievement, is imperative to the integrity of the entire examination system. Nevertheless, the National Educational Psychological Service (NEPS) indicated that "there appears to be a general perception abroad that RACE [Reasonable Accommodations in Certificate Examinations] confers an advantage of some sort" (National Educational Psychological Service, 2007 p. 6).

Phillips (1994), in a paper that considered the implications of allowing accommodations in high stakes tests, drew a distinction between two types of skills that an assessment requires – target skills and access skills. Target skills are skills that the assessment is intended to assess, whereas access skills are the skills that are required to access the examination. For example, for a visually impaired candidate the access skills required to take the examination may be to have sufficient visual acuity, whereas the target skills are English language comprehension and it would be appropriate for the candidate to have an accommodation for his or her visual acuity – whether that be large print, CCTV or Braille papers.

The problem arises in the case of learning disabilities when the access skills may overlap with the target skills. Phillips argued that candidates with disabilities should not have accommodations that address the target skills because that would be unfair and could violate the rights of other candidates. She proposed that one element of assessing if an accommodation was valid was to see if it had the same effect for all candidates, with and without disabilities. If it did, she suggested that the accommodation might not be appropriate.

The difference between the effect of an accommodation on students with and without disabilities is often termed the ‘interaction hypothesis’. This hypothesis proposes that “(a) when test accommodations are given to the students with disabilities who need them, their test scores will improve, relative to the scores they would attain when taking the test under standard conditions; and (b) students without disabilities will not exhibit higher scores when taking the test with those accommodations” (Sireci, Scarpati, & Li, 2005 p. 458).

Sireci et al. (2005), in a review of the literature relating to the interaction hypothesis, found that the vast majority of studies showed that both students with disabilities and their non-disabled peers had higher scores under accommodated conditions, but the gains for students with disabilities were greater than those of the non-disabled students. If accommodations were considered invalid when research indicated that students without disabilities would also get higher scores, then few accommodations would be considered valid and students with disabilities would be greatly disadvantaged. They therefore suggested that the interaction hypothesis needed qualification. The modified hypothesis is often called the ‘differential boost’ (e.g. Fuchs & Fuchs, 2001; Cormier, Altman, Shyyan & Thurlow, 2010) and states that students without disabilities might show improved performance from the use of accommodations, but that the benefit obtained by students with disabilities would be significantly larger than that obtained by students without disabilities. Sireci et al. (2005) justified this saying that “when the gains experienced by students with

disabilities are significantly greater than the gains experienced by their general education peers, the fact that the general education students achieved higher scores with an accommodation condition does not imply that the accommodation is unfair. It could imply that the standardized test conditions are too stringent for all students” (p. 481).

Although many researchers have accepted this modified form of the interaction hypothesis, there has been very little exploration of the relationship between the size and nature of the boost and the validity of the accommodation (Cawthon Ho, Patel, Potvin & Trundt, 2009). Johnstone, Altman, Thurlow, and Thompson (2006), in a review of the effects of test accommodations, concluded that “research that continues to delineate the ‘interaction hypothesis’ and that reduces construct irrelevant variance for students with disabilities without introducing any new effects for non-disabled students still appears to be necessary. Replications of scientific methods to discover the effects of accommodations may help the field to better understand how accommodations affect scoring and validity” (p. 13).

Leaving Certificate accommodations

Certain accommodations have been allowed in the Leaving Certificate examination in Ireland since its inception. Most accommodations must be granted by the State Examination Commission which has the responsibility for the administration of the examination. From 2001, the accommodations that could be granted have included: reader, tape recorder or scribe, Braille papers, enlarged print, use of word processor and a spelling and grammar waiver in language examinations. The number of students availing of accommodations in the Leaving Certificate examinations has increased dramatically since 2001 even though the number of students sitting the Leaving Certificate has decreased (State Examination Commission Annual Reports, 2010 & 2013).

Figure 1 shows that the main increase was in the granting of a spelling and grammar waiver (SGW), which was an accommodation first introduced in 2001. A SGW allows candidates with a specific learning difficulty to apply for a waiver in relation to the assessment of spelling/grammar/punctuation in language subjects. In 2001, there were 264 SGWs which by 2013 had increased over tenfold to 2,820 waivers. Thus, approximately nine percent of all Leaving Certificate candidates received a SGW in 2013.

[Insert Figure 1 here]

Before the SGW was introduced, candidates with disabilities that affected reading or writing could apply for accommodations such as a tape recorder or word-processor with spell-check

enabled, or the use of a scribe. If these accommodations were allowed, then spelling and punctuation could not be assessed and the candidates' scores were prorated to account for this. In 2000, a Review Committee established by the Department of Education and Science recommended that where any candidate's disability made it impossible for him or her to participate in a particular mode of assessment (e.g. an aural examination for a candidate with severe hearing impairment), it should be open to the candidate to apply for exemption from part of the assessment procedure (State Examination Commission, 2000). In response to this recommendation, from 2001, a candidate with a specific learning disability and below average spelling could opt to apply for a waiver in relation to the assessment of spelling and grammar in language subjects (Department of Education and Science, 2000). Despite the fact that spelling and grammar are target skills in language subjects, making the SGW, according to Phillips' (1994) unfair and not valid, no research was conducted into its validity before its introduction.

Although the accommodation is usually referred to as a spelling and grammar waiver, in English examinations it is actually a waiver for spelling and punctuation. If a SGW is granted, then, for English examinations, the student is assessed on all aspects of the English language except spelling and punctuation. In all other language examinations (e.g. Irish, French, German, Spanish etc.) the student is assessed on all aspects of the language except spelling and grammar and their marks are prorated to take account of this.

Examiners marking the Leaving Certificate scripts are experienced teachers who receive training and are given detailed marking instructions. However, there are no special examiners for the SGW (or for any accommodation) and the same examiners mark the standard scripts and the accommodated scripts. A conference of markers is held to discuss any difficulties that arise during the marking process. Several senior examiners supervise the marking and each is responsible for maintaining a uniform standard among a group of markers.

As far as the authors are aware, no other countries have any accommodation which is the equivalent of the SGW for state examinations; however similar schemes are used in some further education and higher education institutions when marking the work of students with dyslexia. As no other jurisdictions appear to have such an accommodation, and no relevant research has been carried out in Ireland, there is currently no evidence on the effects of a SGW.

Many researchers suggest that one of the best ways to test the validity of an accommodation is to compare the results of students with and without disabilities on standard versus accommodated administrations of a test (Fuchs & Fuchs, 2001; Olson & Dirir, 2010; Tindal, Heath, Hollenbeck, Arnold, & Harniss, 1998). The validity of the accommodation would be indicated if the use of the accommodation resulted in a) an increase in the scores of the targeted group and no significant increase in the scores of the general education students or b) if the increase for students with dyslexia was significantly greater than that for general education students (differential boost hypothesis). This is the approach that this research has used.

Aim

The purpose of the study was threefold.

1. To investigate whether a SGW results in a significant increase of the scores of students with dyslexia;
2. To investigate whether a SGW results in a significant increase in the scores of students without dyslexia;
3. To investigate whether students with dyslexia show a differential boost in their scores when both students with and without dyslexia are marked with a SGW.

Methodology

Research design

The investigation of the validity of a SGW was carried out by examining the marks of mock Leaving Certificate English exam papers for students who were eligible for or not eligible for SGWs. All those who were eligible for a SGW will henceforth be described as being students with dyslexia and those who had not been granted a SGW as being students without dyslexia.

A repeated-measures crossover design was used and each student's paper was marked by the same experienced marker on two different occasions, approximately 8 weeks apart, once with a SGW and once in the standard fashion with no accommodations. The marker was not told that the batches of papers were from the same group of students. The independent variables were the status of the student (with or without dyslexia) and the

marking condition (standard marking or with a SGW). The dependent variable was students' marks on the examination.

This is the type of research design that is recommended for research in accommodations (Ketterlin-Geller, Yovanoff, & Tindal, 2007) and allowed for a direct examination of the potential differential benefit of the SGW. The same markers were used to mark each script twice, once with a SGW and one in the normal fashion, in order to minimise any variability due to using different markers, since much research has demonstrated that marking can be influenced by characteristics of the markers who may differ in their leniency or severity (Tisi, Whitehouse, Maughan, & Burdett, 2013).

Participants

Convenience sampling was employed. School principals were contacted to gauge their willingness to participate in the study and interested schools contacted their Leaving Certificate students. Informed consent was obtained from students, and their parents if they were under 18. Exact ages were not obtained; however, the general age range for Leaving Certificate students is seventeen to nineteen.

Participants with SGWs: Thirty-one students with dyslexia were recruited for the study (24 male, 7 female). All participants in this group met the criteria for being granted a SGW in the Leaving Certificate examinations; i.e. they had been confirmed by the National Educational Psychological Service (NEPS) as having a Specific Learning Disability (dyslexia) and below average spelling ability. Six students took the Higher Level English paper and twenty-five took the Ordinary Level paper. All used the SGW (and any other accommodations granted) in the mock examinations and it was intended that they would be used in the actual Leaving Certificate examination.

Participants without a SGW: Thirty-one Leaving Certificate students (29 male, 2 female) who had no SGW were recruited for the study. Eight of these participants took the Higher Level English paper while twenty-three participants took the Ordinary Level paper. None of these participants were granted any accommodation.

Because the design used repeated measures and each person served as their own comparison, it was not considered important to match the groups on variables such as gender, or the level of papers taken.

The examination

All participating students completed the mock Leaving Certificate English paper 1 in their respective schools. The mock Leaving Certificate examinations take place in all schools throughout the Republic of Ireland in February/March to prepare students for the actual Leaving Certificate exams in June. The mock exams are taken seriously by both students and schools and although some schools create their own in-house paper, modelled on the Leaving Certificate papers, many schools buy in the exam papers and also have them marked externally.

English paper 1 requires students to write a number of essays on a variety of topics. Standardised directions and time constraints were consistent across all participants although the exam papers differed between some schools (3 different Ordinary Level English papers and 2 different Higher Level English papers).

Data collection

Following completion of the exams, the participants' scripts were photocopied by the schools and collected by the researcher. Any marks made on the script by the school's markers were removed using correcting fluid before being photocopied.

Four experienced markers were paid to mark the mock English exam papers; all of whom were qualified English teachers who taught Leaving Certificate English and had experience in correcting in-house school exams. Two of the markers had previously been trained and paid to mark Certificate exam papers.

Each student's paper was marked twice by the same marker, approximately 8 weeks apart, once with a SGW and once with no accommodations. The crossover design ensured that within each group (with and without dyslexia) half were marked first with a SGW and half were marked first in the standard fashion. The students were marked first with a SGW and The markers were not told that the batches of papers they were given on each occasion were from the same students.

The marking criteria used were those used by the SEC for marking the Leaving Certificate English paper. Markers were required to mark the papers as if it were the Leaving Certificate and in most cases they were given detailed marking instructions supplied by the companies producing the mock examination papers. For the Leaving Certificate English examinations, all essay questions, both Higher and Ordinary level, are marked in accordance with the following specific rubrics: Clarity of Purpose **(P)**, Coherence of Delivery **(C)**, Efficiency of Language Use **(L)** and Accuracy of Mechanics **(M)**. The first three rubrics have an equal

weighting of thirty percent while Accuracy of Mechanics (M) is worth ten percent of the overall marks. Table 1 outlines each of the criteria for assessment, a description of what is expected by the candidates, examples of the criteria and the percentage of marks allocated to the particular criteria.

[Insert Table 1 here]

The Leaving Certificate marking guidelines also provide explicit instructions on marking the language papers of students who have been granted a SGW. For English examinations, the marking guidelines indicate that students will have all parts of their English examination assessed except spelling and written punctuation elements. In assessing the work of these candidates a modified marking scheme applies as follows:

- (P) Clarity of Purpose 30% (to be assessed)
- (C) Coherence of Delivery 30% (to be assessed)
- (L) Efficiency of Language (including grammar) 30% (to be assessed)
- (M) Spelling and Written Punctuation 10% **(not to be assessed)**

In summary, the marking criteria for Clarity of Purpose (P) and Coherence of Delivery (C) are identical whether marked with or without a SGW; Efficiency of Language (L) includes grammar but not punctuation when marked with a SGW, but includes punctuation but not grammar when marked without a SGW; and Spelling and Written Punctuation (M) is not marked at all if a SGW applies but includes spelling and punctuation when marked without a SGW. These revised criteria are shown in Table 2.

[Insert Table 2 here]

As spelling and written punctuation are no longer being marked, this means, in effect, that these candidates are assessed in all questions out of ninety percent of the marks available for the question. In order to compensate for this, the marks obtained are then prorated to give a score out of one hundred percent. For example, if a student with a SGW achieves a score of forty out of ninety, then they are awarded four ninths of the ten marks that are usually awarded for spelling and grammar, giving a total of forty-four (fractions are ignored and scores are rounded down). As in the Leaving Certificate examinations, markers were informed which students were to be marked with a SGW before marking.

Data analysis

The data for the final marks for all students, marked both with and without a SGW, were analysed. Tests for normality of distribution and homogeneity of variance were not significant and indicated that it would be appropriate to use parametric statistics in the analysis of these variables.

Results from those marked with a SGW were compared to those which were marked without a SGW for both groups (i.e. with and without dyslexia). These comparisons were used to identify 1) if the SGW gave students with dyslexia a significant increase in their scores; 2) if the SGW gave a significant increase in the scores to the students without dyslexia; 3) if there was a differential boost for the students with dyslexia. It was recognised that the sample was small and would not have the power to detect small effect sizes.

While the analysis of group differences is essential to investigate the validity of the SGW, Zuriff (2000) pointed out that such analyses can mask individual variability. As the effect of an accommodation is at the individual level, it was considered important to also assess the effect of the SGW on the individual. In order to do this, since Leaving Certificate results are reported in grades and changes in a students' scores may not be reflected in changes in their grades, all individual marks were converted to the appropriate grade level.

Results

When scripts were marked in the standard way (i.e. without a SGW) the mean score of all students with dyslexia was 107.26 (maximum of 200). When marked with a SGW, the mean score of all these students increased to 115.61 which was close to the mean unaccommodated score of all the students without dyslexia (see Table 3).

[insert Table 3 here]

The results are displayed graphically in Figure 2.

[Insert Figure 2 here]

The three hypotheses on the effect of the accommodation were tested using within-subjects t tests. On average, students with dyslexia performed significantly better when marked with a SGW ($M = 115.61$, $SE = 5.29$) than when marked without a SGW ($M = 107.26$, $SE = 5.24$, $t_{(30)} = 3.01$, $p = .005$). The effect size was .48 (calculated from formula by Rosnow & Rosenthal,

2005) which is moderate. However, students without dyslexia also performed significantly better when marked with a SGW ($M = 122.61$, $SE = 4.05$) than when marked without a SGW ($M = 116.90$, $SE = 4.69$, $t_{(30)} = 2.33$, $p < .05$). The effect size was .39. Thus although hypothesis 1 (that students with dyslexia would have higher scores) was confirmed, hypothesis 2 (that students without dyslexia would not have higher scores) was not confirmed.

To investigate the potential of a 'differential boost', the boost for each student was calculated by subtracting the score attained without a SGW from the score obtained with a SGW. For the total group of both dyslexic and non-dyslexic ($n = 62$), the mean boost was 7.03 marks out of 200, or approximately 3.5%. However, the range was from -29 to +36 and almost a third of all students received lower scores when marked with a SGW. This was true for both the dyslexic students (33% scoring lower) and the non-dyslexic students (29% scoring lower).

The mean boost from the SGW for dyslexic students was 8.35 ($SD = 15.4$) and the 'boost' ranged from -15 to +36, while for non-dyslexic students the mean boost was 5.71 ($SD = 13.6$) and ranged from -29 to +33. The difference between the two means was not significant ($t_{(60)} = -.716$, $p > .05$).

Fuchs and Fuchs (2001) suggested using a formula to determine whether there was a genuine boost. To assess whether the boost for students with a disability was significantly larger than the boost for those without disabilities, they suggested that the size of the boost should be greater than the mean of the non-disabled boost plus one standard deviation of the non-disabled boost. Applying this formula to the data reported, the SGW does not give a differential boost to students with dyslexia, but rather provides a boost for all who receive it.

Nevertheless, although there was no evidence for the validity of the SGW in terms of mean scores, there were substantial individual differences in its effects. For the following analysis scores were converted into grades and comparisons were made between the grades obtained with and without a SGW. This was done because in the Leaving Certificate, only grades are reported, and changes in students' marks would not necessarily be reflected in a change of grade. There are fourteen grades (including Fail and No Grade) and grades from A2 to D3 are in bands of scores representing five percent of the marks.

Although the trend of scores was towards increased grades, several students received lower grades when marked with a SGW. The results are shown in table 4.

[Insert Table 4 here]

As seen in Table 4, when a SGW was applied, six non-dyslexic students (19%) got lower grades, for ten students (32%) it made no difference to their grade and fifteen students (48%) got higher grades. While for the students with dyslexia, nine students (29%) got lower grades when a SGW was applied, for three students (10%) it made no difference and for nineteen students (61%) the accommodated grade was higher.

Since any changes in scores with and without a SGW could be simply the result of variability in marking, it was considered important to provide some estimate of marker reliability. To that end, a correlation was obtained for the marks given by examiners when marked with and without a SGW for the elements of the paper where the marking criteria were identical [Clarity of Purpose (P) and Coherence of Delivery (C)]. The correlation for the four examiners was .89, indicating a high degree of intra-rater reliability.

Discussion

Test accommodations are changes in standardised test conditions that are introduced in order to remove potential sources of measurement error created by disabilities. A valid accommodation should result in scores for students with disabilities that measure the same constructs as standard assessments measure in non-disabled students. One recommended way of identifying valid accommodations is through experimentally demonstrating a 'differential boost' in that the accommodation affects the scores of students with disabilities significantly more than the scores of students without disabilities (Fuchs & Fuchs, 2001; Kettler, Niebling, Mroch, Feldman, & Newell, 2003). The aim of this study was to assess whether the reasonable accommodation of a spelling and grammar waiver is indeed a valid accommodation or whether it gives an unfair advantage to those who are granted it.

The results indicate that a SGW does result in a significant increase in the scores of students with dyslexia; however, it also results in a significant increase in the scores of other students, without dyslexia. Although it might appear that the fact that students with dyslexia attain higher scores when they receive a SGW is a demonstration of its effectiveness, the purpose of identifying appropriate accommodations is to achieve valid, not optimal, scores. The difference between the boost received by students with and without dyslexia was not significant and thus these results suggest that, in terms of the general view of what

constitutes a valid accommodation (Kettler et al., 2003; Stretch & Osborne, 2005) a SGW may not be a valid accommodation and may give an unfair advantage to those who receive it. However, it is important to recognise that the sample size was small and not capable of demonstrating small effects. Thurlow, McGrew, Tindal, Thompson, Ysseldyke, & Elliott (2000) recommend that in investigations of this type there should be a minimum of two hundred subjects in each cell of the design matrix. Nevertheless, the study does raise questions about the validity of the accommodation.

The central issue is the validity of the accommodated test scores and whether accommodated scores have the same meaning as scores from tests taken in the standard manner. Essentially, test scores should have the same meaning for all examinees and the inferences that can be made from test scores should be the same, regardless of whether the test has been taken with an accommodation or not.

A number of studies have shown that the predictive validity of college entrance exams is less for students tested with accommodations than for those tested under standard procedures. These studies indicate that there is an over-prediction of grade scores obtained during college years for students who utilized testing accommodations (Cahalan, Mandinach, & Camara, 2002; Camara, Copeland, & Rothschild, 1998; Zurcher & Bryant, 2001). This would suggest that, for some accommodations at least, accommodated scores do not have the same meaning as scores from standard administrations, to the extent that one cannot make the same predictions from each. It is possible therefore that use of a SGW may inflate students' score and provide misleading interpretations of their proficiency. Nevertheless, these findings provide insight only to expected average performance and do not apply to individual students, some of whom may not benefit from the accommodation. Future research may help to determine more clearly which students will benefit.

Limitations of study

It is recognised that there are limitations to this study. The sample size was a small, convenience sample and the examinations were mock examinations in which the examinees would not have been under the same pressure as in the Leaving Certificate examinations proper. Similarly, this research was carried out using a small sample of markers who, although they had experience in teaching and marking at Leaving Certificate level, had not marked actual Leaving Certificate English papers previously. In addition, the people marking the papers were doing so without the benefit of the training and supports that are available to examiners in the Leaving Certificate. Another limitation of this study is that the results were only assessed on one English paper. While the SGW applies to all language subjects, the

criteria for marking with a SGW are different in each language. These results may not generalise to other subjects and future research should investigate the implications for other subjects separately.

Implications

The findings of this study have implications for the policy and practice of the SEC in granting SGW's to students with specific learning difficulties. Given the high-stakes nature of the Leaving Certificate, it is imperative that everyone can have confidence in the interpretation of students' results. In order to ensure that the 'reasonable accommodation' of a SGW is in fact an accommodation, not an advantage, this current study needs to be replicated, using larger numbers and actual Leaving Certificate papers and markers.

If these results are replicated, then consideration must be given to either discontinuing the SGW or allowing all students to use it if requested. Many students, although not formally identified as having a specific learning disability, may still believe that they would benefit from an accommodation (Olson & Dirir, 2010). Lewandowski, Lambert, Lovett, Panahon, and Sytsma (2014) in a survey of college students with and without disabilities, found that a significant number of students felt that everyone should have access to test accommodations, and/or that tests should be redesigned to remove the need for accommodations. Christensen, Braam, Scullin, and Thurlow (2011) reported that in 2009, 15 US states allowed accommodations for all students, albeit with some qualifications and one of these allowed all students to use all accommodations without any qualifications. Nevertheless, there has been some resistance to allowing non-disabled students avail of accommodations, which possibly arises in part at least from concerns about the logistics of providing them (Thurlow, 2012). In this context, the SGW has the advantage over many other accommodations of not needing any special equipment (e.g. word-processors); personnel (e.g. readers or scribes) or other resources (e.g. separate room) and could easily be allowed to any examinee requesting it. If we accept the differential boost hypothesis that a valid accommodation can improve all students' scores but gives a significantly greater increase in scores to students with disabilities, then, in order to be fair, the accommodation should be available to all since the differential increase in scores for the students with dyslexia would be clearly "levelling the playing pitch" without disadvantaging other students. The SEC already operates a similar policy with regard to extended time as all students are allowed twenty minutes extra time in examinations requiring extensive writing.

This study also highlights that students, schools and parents need to be aware that the use of a SGW does not necessarily mean extra marks or a higher grade. In fact, in a significant

proportion of cases, scripts marked with a SGW received lower marks than the identical script marked in the standard fashion. While this may be due to the unreliability of essay marking (Kayapınar, 2014), it is also possible that the slightly different marking system for students with a SGW may have a negative impact or that examiners may be biased against some students (for example those who write well with few spelling errors and yet are claiming a waiver for spelling and grammar). Whatever the reason, findings like these are important because they contradict the common assumption that the SGW will benefit all those who receive it.

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